WHAT IS CLAIMED IS:

1.   A diagnostic system for diagnosing deterioration of an article comprising:

a light source part for irradiating irradiation light having polarization onto a surface of the article;

a light receiving part for receiving the reflected light from said article;

a measurement part for measuring a variation of polarized light between said irradiated light and said reflected light; and

a diagnosing part for diagnosing a deterioration degree of said article from said measured variation.

2.   A diagnostic system for diagnosing quality of an article comprising:

a light source part for irradiating irradiation light having polarization onto a surface of the article;

a light receiving part for receiving the reflected light from said article;

a measurement part for measuring a variation of polarized light between said irradiated light and said reflected light; and

a diagnosing part for diagnosing quality of said article from said measured variation.

3.   A diagnostic system for diagnosing material of an article comprising:

a light source part for irradiating irradiation light having polarization onto a surface of the article;

a light receiving part for receiving the reflected light from said article;

a measurement part for measuring a variation of polarized light between said irradiated light and said reflected light; and

a diagnosing part for diagnosing material of said article from said measured variation.

4.   A diagnostic system according to any one of claims 1 to 3, wherein said variation of polarized light is depolarization degree of polarized light.

5.   A method of diagnosing deterioration of an article, the method comprising the steps of:

irradiating irradiation light having polarity from a light source emitting light having at least one kind of wavelength onto a surface of said article;

receiving the reflected light from said article;

measuring a depolarization degree of polarized light of said reflected light;

determining a first deterioration degree of said article by executing comparison operation using a pre-stored relationship between depolarization degrees of polarized light and deterioration degrees formed using a deteriorated material of the same kind as a material of

said article;

irradiating irradiation light having at least two kinds of wavelengths onto the surface of said article;

receiving the reflected light from said article;

5   measuring an absorbance difference or an absorbance ratio of said reflected light;

determining a second deterioration degree of said article by executing comparison operation using a pre-stored relationship between absorbance difference or

10   absorbance ratio and deterioration degree formed using a deteriorated material of the same kind as a material of said article; and finally

determining a comprehensive deterioration degree of said article from the determined results of the first

15   deterioration degree and the second deterioration degree based on a pre-stored relationship.

6.   A method of managing deterioration of an article using the method of diagnosing deterioration according to

20   claim 5, the method comprising the steps of discriminating a deterioration factor of said article; and outputting improved contents to said factor.

7.   A method of diagnosing deterioration of an article

25   according to claim 5, wherein said article is a cable sheathing insulation material.

8.   A method of diagnosing deterioration of a cable sheathing insulation material according to claim 7, wherein the deterioration diagnosis of a cable sheathing insulation material is performed using a portion in a state that a cable sheath material is peeled.

9.   A method of managing deterioration of a cable sheathing insulation material, the method comprising the steps of:

obtaining a relationship between physical property and/or electric characteristic of each material used for a cable sheathing insulation material and optical diagnosis result obtained from the non-destructive deterioration diagnosis method of cable sheathing insulation material described in claim 1 in advance;

inputting data on the sheathing insulator material and manufacturing time of a laid cable to be diagnosed, and laying and environment data such as laying time, a place of the cable laying, a laying period and measuring position information to set a deterioration control value for determining a changing timing for each material of the cable sheathing insulation material using the data group for diagnosis in advance; and

determining a changing timing of said cable by executing comparison operation between an optical diagnosis result of the sheathing insulation material of said cable to be diagnosed and the preset deterioration control value.